

William G. Ross Jr., Secretary North Carolina Department of Environment and Natural Resources

> Alan W. Klimek, P.E. Director Division of Water Quality

December 13, 2004

Mr. John H. Berry, P.G. CETCO Drilling Products 1500 West Shure Drive Arlington Heights, IL 60004

RE: CETCO's Geothermal GroutTM

Dear Mr. Berry:

The Aquifer Protection Section of the North Carolina Division of Water Quality is responsible for enforcing the North Carolina Well Construction Standards in Title 15A, Subchapter 2C of North Carolina Administrative Code (15A NCAC 2C). The Aquifer Protection Section has reviewed CETCO's request for approval of Geothermal GroutTM as a specialty grout. Based on the information submitted by CETCO on May 17, 2004, November 6, 2004, and November 24, 2004, the Aquifer Protection Section hereby approves Geothermal GroutTM as a specialty grout in accordance with 15A NCAC 2C .0102(17)(f). This approval is limited to the following conditions:

- 1. This approval applies only to Geothermal Grout[™] as described in the information submitted by CETCO on May 17, 2004, November 6, 2004, and November 24, 2004.
- 2. The product is only approved for use in grouting closed-loop geothermal heat pump wells, defined in 15A NCAC 2C .0209(e)(3)(F) and (G), and also known as ground-source heat pump wells or ground-coupled heat pump wells.
- 3. The product is only approved for use at ratios of not more than 200 lbs silica sand to 50 lbs high-solids bentonite grout.
- 4. The product must be mixed and emplaced in accordance with the Well Construction Standards (15A NCAC 2C) and the manufacturer's specifications.
- 5. This approval does not waive any of the well construction standards contained in 15A NCAC 2C .0100 or 15A NCAC 2C .0200.

If you have any questions regarding this approval or North Carolina's well construction standards, please call Evan Kane at (919)715-6182 or me at (919)715-6172.

Sincerely,

Ted L. Bush, Jr.

Aguifer Protection Section Chief

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